I. EXECUTIVE SUMMARY

INTRODUCTION

The purpose of the Puget Sound Park-and-Ride Study is to develop a comprehensive update to the regional park-and-ride system plan for King, Kitsap, Pierce, and Snohomish Counties. Planning for park-and-ride lots has not been done for the Puget Sound area on a regional basis for 25 years.

This project is sponsored by the Washington Department of Transportation's Office of Urban Mobility (WSDOT OUM). The primary goal of the project is to develop corridor-level park-and-ride demand estimates for existing and future conditions, and to develop short-, mid-, and long-range recommendations for potential park-and-ride investments within the four-county region. The identified investment opportunities may be added to the Washington Transportation Plan (WTP) and will be provided to the Puget Sound Regional Council (PSRC) for use as a guide for recommending facilities in the Metropolitan Transportation Plan (MTP) update. Inclusion in the MTP allows WSDOT to seek partnering opportunities with local transit agencies to jointly site and develop park-and-ride facilities throughout the region. Inclusion of future investment needs in the WTP allows WSDOT to program potential park-and-ride site selection projects as part of their roadway and corridor planning process.

The results of this study provide project recommendations for generalized areas rather than specific sites. It provides an understanding of park-and-ride demand for major corridors in the Puget Sound region and identifies current and future facility needs. The demand forecasts developed in this report can serve as a tool for agencies to use in the allocation of park-and-ride capacity. Unconstrained estimates of current demand as well as 2010 and 2020 demand forecasts are provided.

STUDY AREA DESCRIPTION

The identified focus area for this study includes the four counties of King, Kitsap, Pierce and Snohomish. WSDOT and the transit agencies in each county were requested to identify primary commuting and transit corridors within their jurisdictions for which park-and-ride facility investments would be appropriate either now or in the future. Analysis was focused on these transit corridors.

METHODOLOGY OVERVIEW

A three-part demand estimation methodology was utilized to calculate existing year 2000 demand estimates, as well as year 2010 and 2020 forecasts. The three-part process involved:

- Estimation of existing "unconstrained" park-and-ride facility demand using a regression-based Park-and-Ride Demand (PRD) Model developed for the Puget Sound region.

- Forecasting future demand based on existing "unconstrained" estimates, future service assumptions, and **population** growth rates taken from the PSRC EMME2 travel forecasting model.
- Forecasting future demand based on existing "unconstrained" estimates, future service assumptions, and **transit** ridership growth rates taken from the Sound Transit EMME2 travel forecasting model, or from the PSRC model where appropriate.

The two separate forecasts developed by the population-based and transit-based growth rates were used to provide a range of possible future forecasts. Both demand estimates and forecasts were adjusted according to input from local transit agencies, based on their experience within individual corridors.

DEMAND ESTIMATES

The focus of the demand estimation approach was to develop demand estimates at a corridor level for the major transit corridors in the four counties. These estimates should not be viewed as site-specific implementation recommendations or forecasts. They are based on optimistic assumptions regarding lot placement, size, and transit service in order to develop a corridor-level "unconstrained" demand estimate. Detailed analyses based on factors such as committed transit services, known service area characteristics, competing services, and planned facility locations should be considered as part of site selection and design criteria for actual implementation of park-and-ride projects.

Existing park-and-ride capacity and observed demand, as well as unconstrained demand estimates and forecasts for 2000, 2010 and 2020 are summarized in Table 1.1.

PROGRAMMING & COST ESTIMATES

The primary goal of the study was to provide planning-level capital project recommendations for inclusion in the MTP. Inclusion in the MTP is intended to initiate project programming and create project placeholders for future funding. Programming recommendations were developed to address the existing (year 2000), year 2010, and year 2020 corridor demand estimates.

Programming recommendations for capital projects were developed for three planning periods: short-range (2000-2006), mid-range (2007-2015), and long-range (2016-2030). Short-range projects consist of those projects already programmed by participating agencies. Assuming that the programming of facilities typically lags behind demand, the project list for future time periods responds to the previous period's demand estimate, as follows:

Period	Program Period	Demand Year
Short-Term	2000-2006	2000
Mid-Range	2007-2015	2000 unmet demand
Long-Range	2016-2020	2010
Long-Range	2030 MTP horizon	2020

Project recommendations were reviewed with WSDOT and the participating transit agencies to assure consistency with current agency planning efforts. These agencies provided input based on their local knowledge of the corridor conditions, services, and park-and-ride facilities. Based

on their input, project recommendations were added, deleted, and adjusted in terms of programming time period to better meet the agency's objectives.

Table 1.1

Demand Summaries by County and Transit Corridor

Transit Corridor	Existing Capacity	Existing Demand		Future Demand	
		Observed	Unconstr. Estimate	2010	2020
King County					
I-5 (North)	2121	1984	2980	2400 to 2700	2540 to 3230
I-5 (South)	4299	3345	4920	5720 to 6190	6410 to 7670
I-405	5117	3571	4230	4270 to 4720	5270 to 6460
I-90	1952	1950	3210	4130 to 4440	4780 to 5350
SR 167	1866	1301	2430	2740 to 2840	3340 to 3820
King County Totals	**15,355**	**12,150**	**17,770**	**19,260 to 20,890**	**22,340 to 26,530**
Kitsap County					
South Kitsap	369	357	490	730	1010 to 1410
Central Kitsap	290	218	1370	1840 to 1960	2440 to 3400
SR 305	541	439	670	900 to 1070	1260 to 1750
SR 104	391	191	350	580 to 690	660 to 920
Kitsap County Totals	**1591**	**1205**	**2880**	**4050 to 4450**	**5370 to 7480**
Pierce County					
Peninsula	441	286	420	460	460
I-5 Central	2451	2145	4770	5420	5420 to 6240
Valley	78	19	1170	1380	1380 to 1640
Pierce County Totals	**2970**	**2450**	**6360**	**7260**	**7260 to 8340**
Snohomish County					
Southwest Snohomish	4187	3419	5210	7420 to 8120	9030 to 10840
North Snohomish	359	210	1103	1340	1620
Southeast Snohomish	609	390	1270	1710 to 1810	2060 to 2320
Snohomish County Totals	**5155**	**4019**	**7583**	**10,470 to 11,690**	**12,710 to 16,180**
Four-County Totals	**25,071**	**19,824**	**34,593**	**41,040 to 44,290**	**47,680 to 58,530**

Source: Parsons Brinckerhoff

A summary list of project recommendations and cost estimates is presented in Table 1.2.

Table 1.2

Project Recommendations and Cost Estimates

County	Transit Corridor	Existing Stalls	Short-Term (2000-2006) New Stalls	Short-Term (2000-2006) Cost Estimate	Mid-Range (2007-2015) New Stalls	Mid-Range (2007-2015) Cost Estimate	Long-Range (2016-2020) New Stalls	Long-Range (2016-2020) Cost Estimate	MTP Horizon (2021-2030) New Stalls	MTP Horizon (2021-2030) Cost Estimate	TOTALS New Stalls	TOTALS Cost Estimate
King	I-405	5,117	0	$0	600	$9,000,000	300	$10,680,000	1,650	$53,670,000	2,550	$73,350,000
	I-5 South	4,299	3,400	$54,200,000	0	$0	0	$0	900	$19,350,000	4,300	$73,550,000
	SR 167	1,866	2,190	$57,333,000	0	$0	0	$0	700	$15,050,000	2,890	$72,383,000
	I-5 North	2,121	1,000	$19,500,000	0	$0	0	$0	550	$17,875,000	1,550	$37,375,000
	I-90	1,952	1,500	$37,328,000	650	$16,600,000	1,300	$36,140,000	950	$27,960,000	4,400	$118,028,000
	ITS/Surveillance			$4,940,200		$2,385,600						$7,325,800
	Total	**15,355**	**8,090**	**$173,301,200**	**1,250**	**$27,985,600**	**1,600**	**$46,820,000**	**4,750**	**$133,905,000**	**15,690**	**$382,011,800**
Kitsap	South Kitsap	369	350	$757,200	0	$0	200	$1,500,000	600	$4,500,000	1,150	$6,757,200
	SR 104	391	220	$500,000	0	$0	250	$1,875,000	200	$1,500,000	670	$3,875,000
	Central Kitsap	290	0	$0	1,350	$10,125,000	250	$1,875,000	1,600	$31,600,000	3,200	$43,600,000
	SR 305	541	0	$0	0	$0	0	$0	1,500	$48,000,000	1,500	$48,000,000
	ITS					$746,000						$746,000
	Total	**1,591**	**570**	**$1,257,200**	**1,350**	**$10,871,000**	**700**	**$5,250,000**	**3,900**	**$85,600,000**	**6,520**	**$102,978,200**
Pierce	I-5 Central	1,796	1,450	$34,590,500	1,000	$30,750,000	300	$9,450,000	200	$6,150,000	2,950	$80,940,500
	Valley	78	1,200	$28,286,000	1,000	$31,500,000	250	$7,875,000	100	$1,700,000	2,550	$69,361,000
	Peninsula	441	650	$16,665,000	750	$23,062,500	0	$0	0	$0	1,400	$39,727,500
	Lakewood/Dupont	493	750	$12,673,000	750	$23,062,500	300	$9,450,000	200	$6,150,000	2,000	$51,335,500
	Spanaway/Parkland	162	0	$0	300	$9,450,000	250	$7,875,000	0	$0	550	$17,325,000
	ITS/Surveillance					$1,271,000						$1,271,000
	Total	**2,970**	**4,050**	**$92,214,500**	**3,800**	**$119,096,000**	**1,100**	**$34,650,000**	**500**	**$14,000,000**	**9,450**	**$259,960,500**
Snohomish	SW Snohomish	4,187	4,166	$72,514,400	0	$0	2,250	$50,750,000	2,600	$59,800,000	9,016	$183,064,400
	North Snohomish	359	350	$5,100,000	250	$4,250,000	300	$5,100,000	350	$7,350,000	1,250	$21,800,000
	SE Snohomish	609	600	$8,400,000	650	$7,800,000	0	$0	500	$9,250,000	1,750	$25,450,000
	ITS/Surveillance					$1,632,600						$1,632,600
	Total	**5,155**	**5,116**	**$86,014,400**	**900**	**$13,682,600**	**2,550**	**$55,850,000**	**3,450**	**$76,400,000**	**12,016**	**$231,947,000**
Four County Total		**25,071**	**17,826**	**$352,787,300**	**7,300**	**$171,635,200**	**5,950**	**$142,570,000**	**12,600**	**$309,905,000**	**43,676**	**$976,897,500**

Notes:

1. Program plans are organized by county. The lead agency for a project will be determined at the time of implementation.
2. This program plan identifies the general location, time period, and type of park-and-ride facilities needed. Exact size, location, timing, and type of facility to be determined by local agencies and public process at the time of implementation.
3. Forecasts represent unconstrained transit corridor demand.
4. Cost estimates are in year 2000 dollars.
5. All costs are preliminary planning level capital estimates intended to serve as placeholders. They do not include operations or maintenance costs.
6. Funds have been programmed for lots in the short-term category only. No commitment has been made or is implied regarding funding or the ability to fund further projects.

Source: Parsons Brinckerhoff

INTELLIGENT TRANSPORTATION SYSTEMS

While the focus of the study was to estimate park-and-ride demand and to identify programming recommendations, the study also included some preliminary intelligent transportation system (ITS) concepts for future evaluation. ITS applications could support park-and-ride usage and fit into a comprehensive region-wide park-and-ride plan. Preliminary planning-level cost estimates are presented in Table 1.2, and described in more detail in Section IV.

NEXT STEPS

As population continues to grow in the Puget Sound region, congestion and air quality will remain top concerns. Programs which make it easier or more convenient for people to choose transit over single occupancy vehicles will play an important part in this region's ability to comply with state and federal standards and retain its high quality of living. At the same time, existing land use patterns and commuting preferences must be recognized. Techniques to improve regional mobility and encourage modal shifts are an integral part of the long-range transportation planning process.

This study is intended to support and dovetail with local and regional land use and mobility planning decisions enacted over the next 30 years. Since all demand estimates were produced under an unconstrained methodology, its recommendations can be seen as "maximum" or optimistic scenarios. Maximum flexibility has been incorporated into the programming, with a range of forecasts, time periods, and facility size recommendations. Suggested projects should be considered as order-of-magnitude recommendations within a transit corridor.

In October 2000, the programming recommendations and cost estimates presented in this report were submitted by WSDOT, with the concurrence of local and regional transit agencies within the study area, to the PSRC for inclusion into the MTP. Once this system-wide program of park-and-ride expansion is adopted into both the MTP and WTP, the next step toward implementation will be for local agencies to identify funding for individual projects. This region has been subject to a widely varying political and legislative climate vis-à-vis support of, and funding for, transportation projects. Funding for the recommended facility investments is not guaranteed. As these investment recommendations are further evaluated, funding commitments from appropriate local and regional agencies will be required before implementation.

Most of the short-term projects have already been programmed by local transit agencies. Implementation of projects beyond those currently programmed will require careful analysis of ridership trends, transit service, funding climate, and political feasibility. Meeting local park-and-ride demand may include surface or structured expansion of existing sites, surface or structured new construction, or phased construction. Optimal placement within a transit corridor will involve a site-level study process including alternatives identification, preliminary design/environmental review, public involvement, and funding support.